

ABSTRACT OF THE DISCLOSURE

An interferometric measuring device for measuring the shape of a surface of an object has a radiation source which emits a short-coherent radiation, a beam splitter for forming an object beam which is directed via an object light path to the object and a reference beam which is directed via a reference light path to a reflective reference plane. The interferometric measuring device also has an image converter which picks up the radiation that has been brought to interference and reflected back from the surface and the reference plane and sends it to an analyzing device for determining a measurement result pertaining to the surface. To analyze the interference peak by scanning, the optical length of the object light path is altered relative to the optical length of the reference light path, or an intermediate image of the surface produced in the object light path is scanned. A rapid and accurate measurement of spatially separated surfaces is achieved by situating a superposition optics in the object light path for producing simultaneously an image of the one surface and of at least one additional surface; at least one additional reference plane being situated in the reference light path according to the number of additional surface(s) for producing different optical lengths in the reference light path, and the radiation which is brought to interference and is reflected back by the at least one additional surface and by the respective additional reference plane and is scanned with regard to the interference peak is also sent to the image converter and is analyzed in the analyzing device to determine the measurement result.